

REMARKS

Attached hereto is an Excess Claims Fee letter and fee for two additional independent claims 26 and 27.

Applicants gratefully acknowledge Examiners Ton and Sember for taking time from their busy schedule on June 24, 2003, to discuss the present invention during a courteous and professional personal interview.

During that interview, Applicants' representative discussed how the present invention contributes to the art by having at least one of the light emitting elements mounted essentially directly over the interconnect between the upper metal layer and the lower metal layer. This location over the interconnect allows that light emitting element to be better connected thermally to the opposite metal layer, thereby enhancing heat dissipation.

It was understood by Applicants' representative that both Examiners seemed to concur that this aspect of the present invention would define allowable subject matter if properly stated in the claim language.

By improving heat dissipation for the hotter light emitting element(s), the present invention solves a problem in the art in which hotter light emitting elements change characteristics at higher temperatures, thereby causing the balance of the mixed-color light to shift.

It is noted that the claim amendments above are intended solely to more particularly point out the present invention for the Examiner, and not for distinguishing over the prior art or the statutory requirements directed to patentability.

It is further noted that, notwithstanding any claim amendments made herein, Applicant's intent is to encompass equivalents of all claim elements, even if amended herein or

later during prosecution.

Claims 1-31 are all of the claims pending in the present Application. Claims 1-3, 21-25, and 28-30 are allowed. Applicants gratefully acknowledge the Examiner's indication that claims 26 and 27 would be allowable if rewritten in independent format and have accordingly rewritten these two claims.

Claims 4, 17, and 31 stand rejected under 35 USC §102(b) as anticipated by US Patent 5,177,593 to Abe. Claims 5-16 and 18-20 stand rejected under 35 USC §103(a) as unpatentable over Abe.

These rejections are respectfully traversed in view of the following discussion.

I. THE CLAIMED INVENTION

As described and claimed, for example, by claim 4, the present invention is directed to a light emitting device including an insulating base having an upper surface and a lower surface. A metal layer is provided on the upper surface and the lower surface of the insulating base.

A plurality of light emitting elements is arranged on the metal layer provided on the upper surface of the insulating base. A metal connection connects the metal layers to each other at a position directly over a location where at least one of the plurality of light emitting elements is disposed.

Independent claim 10 recites a somewhat similar structure in which a metal connection connects the metal layers to each other at a position directly over a location where at least one of the plurality of light emitting elements is disposed.

The present invention provides a light emitting device in which homogeneous radiation

characteristics is obtained and, thereby, provides the advantages that no significant change in color balance occurs over time and longer service life.

II. THE PRIOR ART REJECTION

The Examiner alleges that Abe anticipates the present invention as defined by claims 4, 17, and 31. Applicants respectfully disagree.

First, as explained during the above-referenced personal interview, a key feature of the present invention is that the heat dissipation of the various LED chips is equalized by having light emitting elements with the high heat dissipation mounted on top of a through-hole that interconnects the top and bottom metal layers.

Hence, turning to the clear language of the claims (e.g., see claims 4 and 10), there is no teaching or suggestion of “... a metal connection that connects the metal layers to each other at a position directly over a location where at least one of the plurality of light emitting elements is disposed....”

Relative to the rejection currently of record for claims 5 and 6, Abe teaches neither a through-hole plating nor a through-hole plating having a hollow portion filled with metal.

Relative to the rejection currently of record for claim 7, Abe makes no suggestion whatsoever that the different light emitting elements have different heat dissipation problems, let alone arranging these elements to be near a metal interconnection based on heat dissipation.

Relative to the rejection currently of record for claims 8, 9, 15, and 16, Applicants understand the Examiner as having invoked Official Notice and request that the Examiner provide a reference properly combinable with the character LED of Abe.

Relative to the rejection currently of record for claims 13 and 14, Applicants submit

that product-by-process claims do indeed have patentable weight and direct the Examiner's attention to MPEP §2173.05(p). The Examiner's initial burden does not shift by merely declaring that product-by-process limitation has no patentable weight.

That is, according to the guideline in MPEP §2113, the Examiner has the initial burden of identifying a same or similar product, even if produced by a different process. Only then does the burden shift to Applicant.

For the reasons stated above, the claimed invention is fully patentable over the cited references.

Further, the other prior art of record has been reviewed, but it too, even in combination with Abe or Ishinaga, fails to teach or suggest the claimed invention.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-31, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

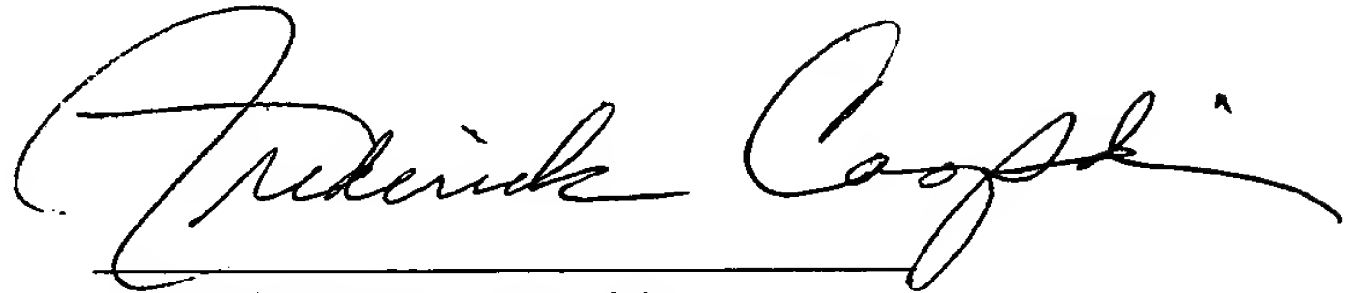
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16

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: 11/13/03

A handwritten signature in dark ink, appearing to read "Frederick E. Cooperrider", written over a horizontal line.

Frederick E. Cooperrider
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